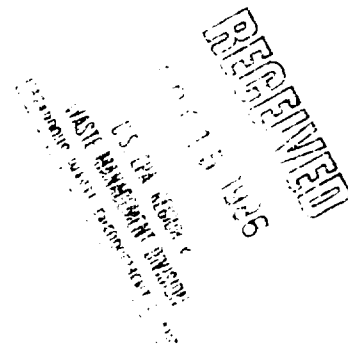




166900

October 14, 1986  
C600109

Mr. Nicholas J. Longo  
U.S. Environmental Protection Agency  
Hazardous Waste Enforcement Branch  
230 South Dearborn Street  
Chicago, IL 60604



RE: Status Report  
Period August 16, 1986 through October 9, 1986  
Wayne Reclamation and Recycling, Inc.  
Columbia City, Indiana

Dear Mr. Longo:

The following status report describes the actions which have been taken toward achieving compliance with the Removal Consent Order for the Wayne Reclamation and Recycling, Inc. (WRR) CERCLA Site and thus the Work Plan, as well as the activities that are scheduled for the next month. This status report is submitted pursuant to Paragraph VII of the WRR Removal Consent Order.

1. PROGRESS MADE THIS PERIOD

Approximately 2500 tons of soil were excavated from the Buried Barrel Area. All visibly contaminated soil was removed prior to reaching the lateral and vertical dimensions of this area as designated in the WRR Removal Consent Order. On August 18, 1986, you, as the U.S. Environmental Protection On-Scene Coordinator (U.S. EPA OSC) informed Warzyn that this excavation of the Buried Barrel Area satisfied the terms of the Consent Order, and the area was subsequently backfilled, compacted and graded.

Mr. Nicholas J. Longo  
October 10, 1986  
Page 2

Approximately 23,000 gallons of liquid and 2,350 tons of solidified soil have been removed from the Oil Decanting Pond (OAL). On August 19, 1986, the U.S. EPA OSC informed Warzyn that this excavation of OAL satisfied the lateral and vertical dimensions of OAL excavation required for the Removal Action. Four soil samples were collected and analyzed: three from beyond the edge of the three visibly contaminated walls and one from the bottom of OAL. These analytical results are included in Appendix A. The U.S. EPA has agreed that OAL need not be backfilled with clean soil at this time until further information from the Remedial Investigation / Feasibility Study (RI/FS) is available to determine whether further excavation beyond the OAL lateral boundaries is necessary. With the U.S. EPA's approval the Respondents installed a 6-foot chain link fence with barbed wire faced out around OAL on September 30, 1986.

The Tar Pit was dewatered twice and approximately 55 tons of visibly contaminated soil removed. On August 19, 1986 the U.S. EPA OSC informed Warzyn that this excavation of the Tar Pit satisfied lateral and vertical limits of the Tar Pit excavation required for the Removal Action. Because of the small size of the excavated area, the U.S. EPA OSC agreed that the Tar Pit should not be backfilled or fenced at this time until information from the RI/FS is available.

Excavation of the Sludge Ravine was suspended at approximately 1500 tons due to lack of adequate staging area. U.S. EPA agreed that the remaining Sludge Ravine excavation required under the Removal Action was: (1) to the lateral dimensions of the Sludge Ravine as identified in the Work Plan or visibly clean soil, whichever is reached first; and (2) vertically to groundwater level; or to visibly clean soil, whichever is reached first. As agreed to by the U.S. EPA OSC, OH Materials Corp. (OHM) will excavate and dispose of the remaining visibly contaminated soil from the Sludge Ravine concurrently and after receiving approval from an appropriate land disposal facility.



Mr. Nicholas J. Longo  
October 10, 1986  
Page 3

Drum count of removed drums is as follows:

<u>AREA</u>	<u>NO. OF EMPTY DRUMS</u>	<u>NO. OF FULL DRUMS</u>
A - Buried Barrel Area	1	157
B,C,D, Surface Areas	8	34
E - Sludge Ravine	90	22
F - Tar Pit	<u>0</u>	<u>9</u>
TOTAL	99	222

OHM collected representative samples from each waste stream prior to demobilizing off-site and performed analytical testing for the proper characterization of the wastes. (Analytical testing results are included in Appendix B). OHM decontaminated all equipment, secured the area, and demobilized off-site on August 21, 1986. Waste material profile sheets have been prepared. These profile sheets and samples will be sent to the disposal facilities listed below for approval.

2. WORK ANTICIPATED

OHM is currently in the process of obtaining the approval of Adams Center in Fort Wayne, Indiana and CECOS in Williamsburg, Ohio to receive the materials. The U.S. EPA has approved these facilities for receiving material from CERCLA sites. OHM anticipates receiving the appropriate approval and commencing the remaining excavation and disposal by the end of October, 1986.



Mr. Nicholas J. Longo  
October 10, 1986  
Page 4

If you have any questions, please give me a call.

Sincerely,

WARZYN ENGINEERING INC.

*Sandra L. Sroonian*

Sandra L. Sroonian  
Project Engineer

cc: Mr. W. Hall  
Mr. T. Bloom  
Mr. J. Buck

6109N010



WARZYN ENGINEERING  
VOLATILE ORGANIC RESULTS

PROJECT: WARZYN ENGINEERING, INC.  
WAYNE RECLAMATION  
LOCATION: CHICAGO, ILLINOIS

PROJECT#: 600109  
DATE SAMPLED: 8/19-21/86  
CK'D: CAW APP'D: MSJ  
DATE ISSUED: 8-28-86

COMPOUND	REPORTABLE DETECTION LIMIT (UG/G)	11550 OA1 BOTTOM	11551 OA1 WEST	11552 OA1 STOCKPILE	11553 OA1 SOUTH	11554 OA1 NORTHEAST
=====	=====	=====	=====	=====	=====	=====
BENZENE	0.05	X	X	X	X	X
BROMODICHLOROMETHANE	0.05	X	X	X	X	X
BROMOFORM	0.10	X	X	X	X	X
CARBON TETRACHLORIDE	0.05	X	X	2.70	X	X
CHLOROBENZENE	0.05	X	X	X	X	X
CHLORODIBROMOMETHANE	0.05	X	X	X	X	X
CHLOROETHANE	0.05	X	X	X	X	X
2-CHLOROETHYL VINYL ETHER	0.05	X	X	X	X	X
CHLOROFORM	0.05	X	X	2.15	X	X
1,2-DICHLOROBENZENE	0.05	X	X	X	X	X
1,3-DICHLOROBENZENE	0.05	X	X	X	X	X
1,4-DICHLOROBENZENE	0.05	X	5.45	X	1.85	2.10
1,1-DICHLOROETHANE	0.05	2.85	2.05	X	X	X
1,2-DICHLOROETHANE	0.05	X	X	X	X	X
1,1-DICHLOROETHENE	0.05	X	X	X	X	X
1,2-DICHLOROETHENE	0.05	59.9	19.6	13.1	2.65	2.20
T-1,3-DICHLOROPROPENE	0.05	X	X	X	X	X
C-1,3-DICHLOROPROPENE	0.05	X	X	X	X	X
1,2-DICHLOROPROPANE	0.05	X	X	X	X	X
ETHYLBENZENE	0.05	2.00	X	X	5.00	X
METHYL BROMIDE	0.10	X	X	X	X	X
METHYL CHLORIDE	0.05	X	X	X	X	X
METHYLENE CHLORIDE	2.5	X	X	X	X	X
1,1,2,2-TETRACHLOROETHANE	0.05	X	X	X	X	X
TETRACHLOROETHENE	0.05	2.33	2.00	98.0	X	X
TOLUENE	0.05	14.5	8.85	4.95	2.20	X
1,1,1-TRICHLOROETHANE	0.05	3.08	5.80	4.00	1.15	2.60
1,1,2-TRICHLOROETHANE	0.05	X	X	X	X	X
TRICHLOROETHENE	0.05	2.05	2.60	36.0	X	0.50
VINYL CHLORIDE	0.05	X	X	X	X	X
XYLENES	0.05	12.6	7.65	11.1	3.85	2.45

X = ANALYZED, BUT NOT DETECTED.

WARZYN ENGINEERING  
ANALYTICAL LABORATORY RESULTS

PROJECT: WARZYN ENGINEERING, INC  
WAYNE RECLAMATION  
LOCATION: CHICAGO, ILLINOIS

PROJECT#: 600109  
DATE SAMPLED: 8/19-21/86  
CK'D: *QAW* APP'D: *MJL*  
DATE ISSUED: 8-28-86 *JA*

LAB #	SAMPLE #	FLASHPOINT (*F)
=====	=====	=====
11550	0A1 BOTTOM	NO FLASH @ ROOM TEMPERATURE
11551	0A1 WEST	NO FLASH @ ROOM TEMPERATURE
11552	0A1 STOCKPILE	NO FLASH @ ROOM TEMPERATURE
11553	0A1 SOUTH	NO FLASH @ ROOM TEMPERATURE
11554	0A1 NORTHEAST	NO FLASH @ ROOM TEMPERATURE

600

WARZYN ENGINEERING  
ANALYTICAL LABORATORY RESULTS

PROJECT: WARZYN ENGINEERING, INC  
WAYNE RECLAMATION  
LOCATION: CHICAGO, ILLINOIS

PROJECT#: 600109  
DATE SAMPLED: 8/19-21/86  
CK'D: *CAW* APP'D: *MJC*  
DATE ISSUED: 8-28-86 *ja*

LAB# SAMPLE# =====	11550 OA1 BOTTOM =====	11551 OA1 WEST =====	11552 OA1 STOCKPILE =====	11553 OA1 SOUTH =====	11554 OA1 NORTHEAST =====
PH (S.U.)	7.6	7.3*	9.2	8.2	7.3
TOTAL CYANIDE (MG/KG AS IS)**	5.43	4.46	14.6	9.38	7.31*
TOTAL SULFIDE (MG/KG AS IS)	25.1	53.9	61.1*	<1.0	24.2
OIL & GREASE (% AS IS)	1.50	4.32	3.25	1.99	3.35*
TOTAL PCB'S (MG/KG DRY WT.)	<2.0	<2.0	<2.0	<2.0	<2.0

EP TOXICITY METALS  
=====

ARSENIC	<0.005	0.008	0.005	0.009*	<0.005
BARIUM	0.30	0.41	0.69	0.67*	1.60
CADMIUM	0.003	0.001	0.014	0.005*	0.003
CHROMIUM	<0.01	<0.01	<0.01	<0.01*	<0.01
LEAD	<0.005	<0.005	0.027	0.012*	0.008
MERCURY	<0.0005	<0.0005	<0.0005	<0.0005*	<0.0005
SELENIUM	<0.010	<0.010	<0.010	<0.010*	<0.010
SILVER	<0.001	<0.001	<0.001	<0.001*	<0.001

RESULTS ARE MG/L ON AN EP TOXICITY EXTRACTION UNLESS OTHERWISE STATED.

\*AVERAGE OF DUPLICATE ANALYSES.

\*\*HIGH SPIKE RECOVERY (306%) NOTED. SAMPLE MATRIX VARIED FROM PEA-SIZE GRAVEL TO SAND.



THE ENVIRONMENTAL SERVICES COMPANY

O.H. MATERIALS CO.  
1000 N. 10TH ST.  
COLUMBIA CITY, IN 47522  
(317) 768-1111  
FAX (317) 768-1112

## ANALYTICAL REPORT

CLIENT: Wayne Reclamation  
Columbia City, IN

AMENDED: 8-20-86

ATTN:

OHM PROJECT #: 4033

SAMPLE TYPE: Liquid Drum Samples

OHM PROJ. MGR: T. Edinger

ANALYSIS PERFORMED:

Priority Pollutants


DATE COMPLETED: 8-15-86

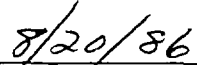
DATE RECEIVED: 8-04-86

*This report is "PROPRIETARY AND CONFIDENTIAL" and delivered to, and intended for the exclusive use of, the above named client only. O.H. Materials Co. assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.*

*All of the analyses and data interpretation that form the basis of this report were prepared under the direct supervision and control of the undersigned who is solely responsible for the contents and conclusions therein.*

Reviewed and  
Approved by:

  
Thomas E. Gran, Ph.D., Laboratory Manager

  
Date



PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICESI. INTRODUCTION

O.H. Materials Corp. (OHM) Corporate Laboratory received one (1) drum sample from Wayne Reclamation, Columbia City, Indiana. This sample was acquired by OHM's technical personnel and transferred to the laboratory complete with a chain-of-custody record, a copy of which is attached for reference. The sample was analyzed for the presence of priority pollutants.

II. ANALYTICAL METHODOLOGYA. GC/MS Volatile Organic Analyses and Screens

Volatile analysis of the samples was performed using methods based on EPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, July 1982; Method 8240, GC/MS Methods for Volatile Organics.

B. Priority Pollutant Metals - Samples were prepared and analyzed according to USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, July 1982. Samples were prepared by either Method 3010, 3030, 3050, or 1310 as appropriate for the following metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc. Sample analyses for these metals were performed according to method 6010, Inductively Coupled Plasma Method (SW-846 Proposed Sampling and Analytical Methodologies, 1984). Arsenic and selenium were analyzed by Method 7061 and Method 7741, respectively, Gaseous Hydride Methods. Mercury was prepared and analyzed by Method 7470 (liquids) or Method 7471 (solids), as appropriate, Manual Cold Vapor Techniques. Method 7470 was used when Method 1310 was used to prepare the samples.

C. Total Cyanides, Water and Wastewater - Water and wastewater samples were analyzed for total cyanide content by USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, July 1982 (Revised April 1984); Method 9010, Total and Amenable Cyanide and by Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985; Method 412E, Cyanide Selective Electrode Method.

PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICES

- D. Total Phenols, Water and Wastewater - The total phenols content of the liquid samples were determined by USEPA 600/4-79-020 (Revised March 1983); Method 420.1, Phenolics, Total Recoverable (Spectrophotometric, Manual 4-AAP with Distillation).
- E. PCBs Water and Wastewater - The polychlorinated biphenyl content of the liquid samples (except oil samples) was determined by USEPA 600/4-82-057, July 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater; Method 608, Organochlorine Pesticides and PCBs.
- F. GC/MS Semi-Volatile Organic Analyses and Screens-Water and Wastewater - Acid and base neutral extractables were prepared and analyzed using methods based on USEPA 600/4-82-057, July 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater; Method 625, Base/Neutrals and Acids. The samples were extracted by Method 3510 (SW-846), Separatory Liquid-Liquid Extraction or by Method 3520 (SW-846), Continuous Liquid-Liquid Extraction.

III. ANALYTICAL RESULTS

Tables 1 through 9 details the results of the various analyses performed on Sample #4033-1001.

PROJECT 4033TABLE 1 - PRIORITY POLLUTANT ANALYSIS

SAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

Parameter	Concentration mg/L	Detection Limit (mg/L)
Total Cyanide	1.314	1.0
Total Phenols	6.15	0.4

mg/L = ppm (parts-per-million)

PROJECT 4033TABLE 2 - TOTAL METALS FOR PRIORITY POLLUTANT ANALYSIS

SAMPLE IDENTIFIER: Liquid Drum Sample

OHM SAMPLE NUMBER: 4033-1001

Compound Name	Concentration mg/L	Detection Limit mg/L
Antimony	BDL	.05
Arsenic	BDL	.05
Barium	.453	.05
Beryllium	BDL	.005
Cadmium	BDL	.005
Chromium (Total)	BDL	.02
Copper	BDL	.01
Lead	BDL	.02
Mercury	BDL	.02
Nickel	.0423	.02
Selenium	BDL	.01
Silver	BDL	.01
Thallium	BDL	.01
Zinc	.183	.01

mg/L = ppm (parts-per-million)

BDL = Below Detection Limit

PROJECT 4033TABLE 3 - VOLATILE SCREEN

SAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

Compound	Concentration (ug/L)
Total Xylenes	39.5

Limit of Detection = 1.0 ug/L ppb (parts-per-billion)

PROJECT 4033TABLE 4 - VOLATILE ORGANICS

SAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

Compound Name	Concentration ug/L	Detection Limit ug/L
Benzene	4.1	1.0
Bromomethane	BDL	1.0
Bromodichloromethane	BDL	1.0
Bromoform	BDL	1.0
Carbon Tetrachloride	BDL	1.0
Chlorobenzene	BDL	1.0
Chloroethane	BDL	1.0
2-Chloroethylvinyl ether	BDL	1.0
Chloroform	BDL	1.0
Chloromethane	BDL	1.0
Dibromochloromethane	BDL	1.0
1,3-Dichlorobenzene	BDL	1.0
1,2-Dichlorobenzene	BDL	1.0
1,4-Dichlorobenzene	BDL	1.0
1,1-Dichloroethane	6.1	1.0
1,2-Dichloroethane	BDL	1.0
1,1-Dichloroethene	BDL	1.0
Trans-1,2-Dichloroethene	1,310	1.0
1,2-Dichloropropane	BDL	1.0
Total Dichloropropenes	BDL	1.0
Ethylbenzene	9.9	1.0
Methylene Chloride	BDL	1.0
1,1,2,2-Tetrachloroethane	BDL	1.0
Tetrachloroethene	24.7	1.0
1,1,1-Trichloroethane	1.9	1.0
1,1,2-Trichloroethane	BDL	1.0
Trichloroethene	35.9	1.0
Trichlorofluoromethane	BDL	1.0
Toluene	27.0	1.0
Vinyl Chloride	251	1.0

ug/L = ppb (parts-per-billion)

BDL = Below Detection Limit

PROJECT 4033TABLE 5 - SEMI-VOLATILE SCREEN RESULTS

SAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

Compound	Concentration (ug/L)
4-Methyl phenol	357
Benzyl Alcohol	11.8
2-Methyl Naphthalene	12.5
4,6-Dinitro-ortho-cresol	20.7

Limit of Detection = 2.0 ug/L ppb (parts-per-billion)

PROJECT 4033TABLE 6 - SEMI-VOLATILE-PCB BY GC ANALYSIS

SAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

Compound	Concentration (mg/L)
Aroclor 1016	BDL
Aroclor 1221	BDL
Aroclor 1232	BDL
Aroclor 1242	BDL
Aroclor 1248	BDL
Aroclor 1254	BDL
Aroclor 1260	BDL
Aroclor 1262	BDL
Aroclor 1268	BDL

Limit of Detection = 0.002 mg/L ppm (parts-per-million)  
BDL = Below Detection Limit



PROJECT 4033  
TABLE 7 - BASE/NEUTRAL COMPOUNDSSAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

Compound	Concentration (ug/L)
Acenaphthene	BDL
Acenaphthylene	BDL
Anthracene	BDL
Benzo(a)anthracene	BDL
Benzo(b)fluoranthene	BDL
Benzo(k)fluoranthene	BDL
Benzo(a)pyrene	BDL
Benzo(g,h,i)perylene	BDL
Bis(2-chloroethyl)ether	BDL
Bis(2-chloroethoxy)methane	BDL
Bis(2-ethylhexyl)phthalate	BDL
Bis(2-chloroisopropyl)ether	BDL
4-Bromophenyl phenyl ether	BDL
Butyl benzyl phthalate	BDL
2-Chloronaphthalene	BDL
4-Chlorophenyl phenyl ether	BDL
Chrysene	BDL
Dibenzo(a,h)anthracene	BDL
Di-n-butylphthalate	BDL
1,3-Dichlorobenzene	BDL
1,4-Dichlorobenzene	BDL
1,2-Dichlorobenzene	BDL
Diethylphthalate	BDL
Dimethylphthalate	BDL
2,4-Dinitrotoluene	BDL
2,6-Dinitrotoluene	BDL
Dioctylphthalate	BDL
1,2-Diphenyl hydrazine	BDL
Fluoranthene	BDL
Fluorene	BDL
Hexachlorobenzene	BDL
Hexachlorobutadiene	BDL
Hexachloroethane	BDL
Hexachlorocyclopentadiene	BDL
Indeno-(1,2,3-cd)pyrene	BDL
Isophorone	BDL
Naphthalene	7.74
Nitrobenzene	BDL
N-Nitrosodi-n-propylamine	BDL
N-Nitrosodiphenylamine	BDL
Phenanthrene	3.16
Pyrene	BDL
1,2,4-Trichlorobenzene	BDL

ug/L = ppb (parts-per-billion)  
BDL = Below Detection Limit

PROJECT 4033TABLE 8 - ACID EXTRACTABLE

SAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

Compound Name	Concentration ug/L	Detection Limit ug/L
4-Chloro-3-Methylphenol	BDL	2.0
2-Chlorophenol	BDL	2.0
2,4-Dichlorophenol	BDL	2.0
2,4-Dimethylphenol	7.43	2.0
2,4-Dinitrophenol	BDL	2.0
2-Methyl-4,6-Dinitrophenol	BDL	2.0
2-Nitrophenol	BDL	2.0
4-Nitrophenol	BDL	2.0
Pentachlorophenol	BDL	2.0
Phenol	32.7	2.0
2,4,6-Trichlorophenol	BDL	2.0

ug/L = ppb (parts-per-billion)  
BDL = Below Detection Limit

PROJECT 4033TABLE 9 - PESTICIDES AND PCBS

SAMPLE IDENTIFIER: Liquid Drum Sample  
OHM SAMPLE NUMBER: 4033-1001

=====		
Compound Name	Concentration ug/L	Detection Limit ug/L
=====		
Aldrin	BDL	2.0
BHC-alpha	BDL	2.0
BHC-beta	BDL	2.0
BHC-gamma	BDL	2.0
BHC-delta	BDL	2.0
Chlordane	BDL	20.0
4,4'-DDD	BDL	2.0
4,4'-DDE	BDL	2.0
4,4'-DDT	BDL	2.0
Dieldrin	BDL	2.0
Endosulfan-alpha	BDL	2.0
Endosulfan-beta	BDL	2.0
Endosulfan Sulfate	BDL	2.0
Endrin	BDL	2.0
Endrin Aldehyde	BDL	2.0
Heptachlor	BDL	2.0
Heptachlor Epoxide	BDL	2.0
Toxaphene	BDL	20.0

POLYCHLORINATED BIPHENYLS

Aroclor 1016	BDL	20.0
Aroclor 1221	BDL	20.0
Aroclor 1232	BDL	20.0
Aroclor 1242	BDL	20.0
Aroclor 1248	BDL	20.0
Aroclor 1254	BDL	20.0
Aroclor 1260	BDL	20.0

ug/L = ppb (parts-per-billion)  
BDL = Below Detection Limit



The Environmental Services Company

O.H. Materials Co.  
P.O. Box 551  
Findlay, Ohio 45839-0551  
Phone (419) 423-3526

# CHAIN-OF-CUSTODY RECORD

13360

PROJECT LOCATION		NAME OF CLIENT		PROJECT TELEPHONE NO	PROJECT NUMBER				
Columbia City, IN.		WRR		217-248-2478	4033				
ITEM NUMBER	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINERS	DESCRIPTION	TRANSFER NUMBER & CHECK					
				1	2	3	4	5	6
1	4033-1000	2 QT JARS	1030 R/S/DN dup Samples From OA-1 Solid, Silt, oil, Sludge	✓	✓				
2	4033-1001	2-QT JARS	1000 R/S/DN Semi-Clear, q. w. a little material dup. Samples From Tar Pit (LIQUID)	✓	✓				
3	4033-1002	2 QTS JARS	1100 R/S/DN TOP LAYER AS SLUDGE RAVINE ORANGE/GRAY MATERIAL	✓	✓				
4	4033-1003	2 QT JARS	1100 R/S/DN BOTTOM LAYER SLUDGE RAVINE ORANGE/BLACK	✓	✓				
5	<del>4033-1004</del>	<del>2 QT JARS</del>	<del>ATM</del>						
6									
7									
8									
9 Notes dup Sample 1 is for disposal ANALYSIS other is to be sent to disposal									

Person Responsible for sample	Affiliation	Date	Time	TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
DAVID MEEKER	O.H.M.	8/4	1130	1	1-4	Mac Ken	John J. Ward	8/4/00	2000
Purpose of analysis (use back of front sheet if necessary)				2	1-4	John J. Ward	John J. Ward	8/4/00	2000
SAMPLE 1000 TO BE RUN FOR Priority Pollutants only				3					
SAMPLES 1002 TO BE RUN FOR disposal ANALYSIS				5					
				6					



THE ENVIRONMENTAL SERVICES COMPANY

O.H. MATERIALS CO.  
16416 S. HICKORY AVE.  
P.O. BOX 201  
INDIANAPOLIS, IN 46219  
PHONE: (317) 551-1000  
FAX: (317) 551-1001  
TELEX: 150000 O.H. CO. IN  
CABLE: O.H. CO. IN

## ANALYTICAL REPORT

CLIENT: Wayne Reclamation  
Columbia City, IN

ATTN:

OHM PROJECT #: 4033

SAMPLE TYPE: Composite Water Sample  
(Pool A + Pool B)

OHM PROJ. MGR: T. Edinger

ANALYSIS PERFORMED:

Aqueous Treatment Disposal

DATE COMPLETED: 8-18-86

DATE RECEIVED: 7-30-86

*This report is "PROPRIETARY AND CONFIDENTIAL" and delivered to, and intended for the exclusive use of, the above named client only. O.H. Materials Co. assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.*

*All of the analyses and data interpretation that form the basis of this report were prepared under the direct supervision and control of the undersigned who is solely responsible for the contents and conclusions therein.*

Reviewed and  
Approved by:

TE Gran  
Thomas E. Gran, Ph.D., Laboratory Manager

8/20/86  
Date

PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICESI. INTRODUCTION

O.H. Materials Corp. (OHM) Corporate Laboratory received two (2) water samples from Wayne Reclamation, Columbia City, Indiana. These samples were acquired by OHM's technical personnel and transferred to the laboratory complete with a chain-of-custody record, a copy of which is attached for reference. These samples were composited to form Sample #4033-BNC-01. Aqueous treatment disposal analysis tests were run on this composite.

II. ANALYTICAL METHODOLOGYA. GC/MS Volatile Organic Analyses and Screens

Volatile analysis of the samples was performed using methods based on EPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, July 1982; Method 8240, GC/MS Methods for Volatile Organics.

B. Density - Densities of the samples were determined according to Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985; Method 213E, Specific Gravity.

C. Priority Pollutant Metals - Samples were prepared and analyzed according to USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, July 1982. Samples were prepared by either Method 3010, 3030, 3050, or 1310 as appropriate for the following metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc. Sample analyses for these metals were performed according to method 6010, Inductively Coupled Plasma Method (SW-846 Proposed Sampling and Analytical Methodologies, 1984). Arsenic and selenium were analyzed by Method 7061 and Method 7741, respectively, Gaseous Hydride Methods. Mercury was prepared and analyzed by Method 7470 (liquids) or Method 7471 (solids), as appropriate, Manual Cold Vapor Techniques. Method 7470 was used when Method 1310 was used to prepare the samples.

PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICES

- D. Peroxides - All samples were tested for the presence of peroxides by using commercially available peroxide test strips.
- E. pH - All samples that were water soluble were tested with pH strips to determine if they were corrosive as per EPA-600/4-84-038 (May 1984); Characterization of Hazardous Waste Sites.
- F. Sulfides - Sulfide analyses were performed according to EPA 600/4-84-038, Characterization of Hazardous Waste Sites-A Methods Manual, May 1984; Section 17, G.1.2. Determination of Sulfide in Solid Phase Hazardous Waste Disposal Site Samples.
- G. Oxidizers - All water soluble or partially water soluble samples were tested for oxidizing strength by a spot test with potassium iodide and starch paper.
- H. Flammability - Flash points were performed at 60°C according to the procedure specified in USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, July 1982; Method 1020, Seta-flash Closed-cup Method.
- I. Total Cyanides, Water and Wastewater - Water and wastewater samples were analyzed for total cyanide content by USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, July 1982 (Revised April 1984); Method 9010, Total and Amenable Cyanide and by Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985; Method 412E, Cyanide Selective Electrode Method.
- J. Total Solids, Liquids - Total solids for the liquid samples were determined by USEPA 600/4-79-020 (Revised March 1983); Method 160.3, Residue, Total (Gravimetric, Dried at 103-105°C).
- K. Alkalinity - The alkalinity of the liquid samples were determined by USEPA 600/4-79-020 (Revised March 1983); Method 310.1, Alkalinity (Titrimetric, pH 4.5).

PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICES

- L. Total Phenols, Water and Wastewater - The total phenols content of the liquid samples were determined by USEPA 600/4-79-020 (Revised March 1983); Method 420.1, Phenolics, Total Recoverable (Spectrophotometric, Manual 4-AAP with Distillation).
- M. PCBs Water and Wastewater - The polychlorinated biphenyl content of the liquid samples (except oil samples) was determined by USEPA 600/4-82-057, July 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater; Method 608, Organochlorine Pesticides and PCBs.
- N. GC/MS Semi-Volatile Organic Analyses and Screens-Water and Wastewater - Acid and base neutral extractables were prepared and analyzed using methods based on USEPA 600/4-82-057, July 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater; Method 625, Base/Neutrals and Acids. The samples were extracted by Method 3510 (SW-846), Separatory Liquid-Liquid Extraction or by Method 3520 (SW-846), Continuous Liquid-Liquid Extraction.

III. ANALYTICAL RESULTS

Tables 1 through 9 details the results of the various analyses performed on Sample #4033-BNC-01.



PROJECT 4033TABLE 1 - AQUEOUS TREATMENT DISPOSAL ANALYSIS

SAMPLE IDENTIFIER: Pool Water Composite  
OHM SAMPLE NUMBER: 4033-BNC-01

Parameter	Result
Peroxides	Negative
Density	0.994 gm/cm <sup>3</sup>
Percent Solids	0.34% by weight
Flammability	> 60°C
Total Cyanide	0.224 mg/L
Total Sulfide	< 4.0 mg/L
Total Phenols	0.985 mg/L
Oxidizer	Negative
pH Test	4.96 pH units
Total Alkalinity	134 mg/L CaCO <sub>3</sub>

PROJECT 4033TABLE 2 - TOTAL METALS FOR AQUEOUS TREATMENT DISPOSAL ANALYSIS

SAMPLE IDENTIFIER: Pool Composite Sample  
OHM SAMPLE NUMBER: 4033-BNC-01

Compound Name	Concentration mg/L	Detection Limit mg/L
Antimony	BDL	2.0
Arsenic	BDL	2.0
Barium	BDL	2.0
Beryllium	BDL	2.0
Cadmium	BDL	2.0
Chromium (Total)	BDL	2.0
Copper	BDL	2.0
Lead	BDL	2.0
Mercury	BDL	1.0
Nickel	BDL	2.0
Selenium	BDL	2.0
Silver	BDL	2.0
Thallium	BDL	2.0
Zinc	BDL	2.0

mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 3 - VOLATILE SCREEN

SAMPLE IDENTIFIER: Pool Composite Sample  
OHM SAMPLE NUMBER: 4033-BNC-01

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Compound	Concentration (ug/L)
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No chromatographic peaks within 25% of internal standard area

Limit of Detection = 500 ug/L ppb (parts-per-billion)

PROJECT 4033TABLE 4 - SEMI-VOLATILE SCREEN RESULTS

SAMPLE IDENTIFIER: Pool Composite Sample  
OHM SAMPLE NUMBER: 4033-BNC-01

Compound	Concentration (mg/L)
Aliphatic Hydrocarbons	233
Alkanoic Acids	16.9

Limit of Detection = 2.0 mg/L ppm (parts-per-million)

PROJECT 4033TABLE 5 - SEMI-VOLATILE-PCB BY GC ANALYSIS

SAMPLE IDENTIFIER: Pool Composite Sample  
OHM SAMPLE NUMBER: 4033-BNC-01

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Compound	Concentration (mg/L)
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=====

Aroclor 1016	BDL
Aroclor 1221	BDL
Aroclor 1232	BDL
Aroclor 1242	BDL
Aroclor 1248	BDL
Aroclor 1254	BDL
Aroclor 1260	BDL
Aroclor 1262	BDL
Aroclor 1268	BDL

Limit of Detection = 0.05 mg/L ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 6 - VOLATILE ORGANICS

SAMPLE IDENTIFIER: Pool Composite Sample  
 OHM SAMPLE NUMBER: 4033-BNC-01

Compound Name	Concentration (ug/L)
Benzene	BDL
Bromomethane	BDL
Bromodichloromethane	BDL
Bromoform	BDL
Carbon Tetrachloride	BDL
Chlorobenzene	BDL
Chloroethane	BDL
2-Chloroethylvinyl ether	BDL
Chloroform	BDL
Chloromethane	BDL
Dibromochloromethane	BDL
1,3-Dichlorobenzene	BDL
1,2-Dichlorobenzene	BDL
1,4-Dichlorobenzene	BDL
1,1-Dichloroethane	BDL
1,2-Dichloroethane	BDL
1,1-Dichloroethene	BDL
Trans-1,2-Dichloroethene	BDL
1,2-Dichloropropane	BDL
Total Dichloropropenes	BDL
Ethylbenzene	BDL
Methylene Chloride	BDL
1,1,2,2-Tetrachloroethane	BDL
Tetrachloroethene	BDL
1,1,1-Trichloroethane	BDL
1,1,2-Trichloroethane	BDL
Trichloroethene	9,850
Trichlorofluoromethane	BDL
Toluene	BDL
Vinyl Chloride	BDL

Limit of Detection = 500 ug/L = ppb (parts-per-billion)  
 BDL = Below Detection Limit

PROJECT 4033  
TABLE 7 - BASE/NEUTRAL COMPOUNDSSAMPLE IDENTIFIER: Pool Composite Sample  
OHM SAMPLE NUMBER: 4033-BNC-01

Compound	Concentration (mg/L)
Acenaphthene	BDL
Acenaphthylene	BDL
Anthracene	BDL
Benzo(a)anthracene	BDL
Benzo(b)fluoranthene	BDL
Benzo(k)fluoranthene	BDL
Benzo(a)pyrene	BDL
Benzo(g,h,i)perylene	BDL
Bis(2-chloroethyl)ether	BDL
Bis(2-chloroethoxy)methane	BDL
Bis(2-ethylhexyl)phthalate	BDL
Bis(2-chloroisopropyl)ether	BDL
4-Bromophenyl phenyl ether	BDL
Butyl benzyl phthalate	BDL
2-Chloronaphthalene	BDL
4-Chlorophenyl phenyl ether	BDL
Chrysene	BDL
Dibenzo(a,h)anthracene	BDL
Di-n-butylphthalate	BDL
1,3-Dichlorobenzene	BDL
1,4-Dichlorobenzene	BDL
1,2-Dichlorobenzene	BDL
Diethylphthalate	BDL
Dimethylphthalate	BDL
2,4-Dinitrotoluene	BDL
2,6-Dinitrotoluene	BDL
Diethylphthalate	BDL
1,2-Diphenyl hydrazine	BDL
Fluoranthene	BDL
Fluorene	BDL
Hexachlorobenzene	BDL
Hexachlorobutadiene	BDL
Hexachloroethane	BDL
Hexachlorocyclopentadiene	BDL
Indeno-(1,2,3-cd)pyrene	BDL
Isophorone	BDL
Naphthalene	BDL
Nitrobenzene	BDL
N-Nitrosodi-n-propylamine	BDL
N-Nitrosodiphenylamine	BDL
Phenanthrene	BDL
Pyrene	BDL
1,2,4-Trichlorobenzene	BDL

Limit of Detection = 0.20 mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 8 - ACID EXTRACTABLE

SAMPLE IDENTIFIER: Pool Composite Sample  
OHM SAMPLE NUMBER: 4033-BNC-01

Compound Name	Concentration mg/L	Detection Limit mg/L
4-Chloro-3-Methylphenol	BDL	0.20
2-Chlorophenol	BDL	0.20
2,4-Dichlorophenol	BDL	0.20
2,4-Dimethylphenol	BDL	0.20
2,4-Dinitrophenol	BDL	0.20
2-Methyl-4,6-Dinitrophenol	BDL	0.20
2-Nitrophenol	BDL	0.20
4-Nitrophenol	BDL	0.20
Pentachlorophenol	BDL	0.20
Phenol	BDL	0.20
2,4,6-Trichlorophenol	BDL	0.20

mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit



PROJECT 4033TABLE 9 - PESTICIDES AND PCBS

SAMPLE IDENTIFIER: Pool Composite Sample  
 OHM SAMPLE NUMBER: 4033-BNC-01

Compound Name	Concentration	Detection
	mg/L	Limit mg/L
Aldrin	BDL	0.20
BHC-alpha	BDL	0.20
BHC-beta	BDL	0.20
BHC-gamma	BDL	0.20
BHC-delta	BDL	0.20
Chlordane	BDL	2.0
4,4'-DDD	BDL	0.20
4,4'-DDE	BDL	0.20
4,4'-DDT	BDL	0.20
Dieldrin	BDL	0.20
Endosulfan-alpha	BDL	0.20
Endosulfan-beta	BDL	0.20
Endosulfan Sulfate	BDL	0.20
Endrin	BDL	0.20
Endrin Aldehyde	BDL	0.20
Heptachlor	BDL	0.20
Heptachlor Epoxide	BDL	0.20
Toxaphene	BDL	2.0

POLYCHLORINATED BIPHENYLS

Aroclor 1016	BDL	2.0
Aroclor 1221	BDL	2.0
Aroclor 1232	BDL	2.0
Aroclor 1242	BDL	2.0
Aroclor 1248	BDL	2.0
Aroclor 1254	BDL	2.0
Aroclor 1260	BDL	2.0

mg/L = ppm (parts-per-million)  
 BDL = Below Detection Limit



The Environmental Services Company

O.H. Materials Co.  
P.O. Box 551  
Findlay, Ohio 45839-0551  
Phone (419) 423-3526

# CHAIN-OF-CUSTODY RECORD

Nº 22281

C ✓X

PROJECT LOCATION		NAME OF CLIENT		PROJECT TELEPHONE NO	PROJECT NUMBER					
Columbia City, Ind		Wayne Reclamation		(219) 248-2498	4033					
ITEM NUMBER	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINERS	DESCRIPTION	TRANSFER NUMBER & CHECK						
1		+ 38 oz 1-32 oz glass jar	Water Sample Pool A 1900 hr 7/29/86 RC/Cooper	1	2	3	4	5	6	7
2		11	Water Sample Pool A 1902 hr 7/29/86 RC/Cooper							
3		11	Water Sample Pool B 1903 hr 7/29/86 RC/Cooper							
4		11	Water Sample Pool B 1905 hr 7/29/86 RC/Cooper							
			Item 1 and 3 composited together to produce composite sample 4033-BNC-Ø1 and 4033-BNC-Ø2							
			PCBIS on 4033-BNC-Ø1 started							
			8-6-86 - 1-3 DAY TAT							

Person Responsible for sample	Affiliation	Date	Time	TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
F. Cheske	OHM	7/29	1930	1	1-4	Fred M Cheske	(Signature)	7/29/86	
Purpose of analysis (use back of front sheet if necessary) Disposal Analysis Ag. Treat. 3 wk TAT on 1-1-86				2			(Signature)	7/30/86	0730
				3					
				4					
				5					
				6					



THE ENVIRONMENTAL SERVICES COMPANY

## ANALYTICAL REPORT

CLIENT: Wayne Reclamation  
Columbia City, IN

ATTN:

OHM PROJECT #: 4033

SAMPLE TYPE: Solid and Liquid Composite  
Samples

OHM PROJ. MGR: T. Edinger

ANALYSIS PERFORMED:

Disposal Analysis


DATE COMPLETED: 8-25-86

DATE RECEIVED: 8-4-86 and 8-13-86

*This report is "PROPRIETARY AND CONFIDENTIAL" and delivered to, and intended for the exclusive use of, the above named client only. O.H. Materials Co. assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.*

*All of the analyses and data interpretation that form the basis of this report were prepared under the direct supervision and control of the undersigned who is solely responsible for the contents and conclusions therein.*

Reviewed and  
Approved by:

  
Thomas E. Gran, Ph.D., Laboratory Manager

8/26/86  
Date

PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICESI. INTRODUCTION

O.H. Materials Corp. (OHM) Corporate Laboratory received five (5) composite samples from Wayne Reclamation, Columbia City, Indiana. These samples were acquired by OHM's technical personnel and transferred to the laboratory complete with a chain-of-custody record, a copy of which is attached for reference. These composited samples had various disposal analysis tests performed on them.

II. ANALYTICAL METHODOLOGYA. Total Phenols in Soil/Sediment

The samples were prepared by accurately weighing an approximate 20 g aliquot of each sample and then suspend the solid in 500 ml Lab Grade I water. The pH of the sample solutions were adjusted to pH 4 with 1 + 9 phosphoric acid, then 5 mls of 10% copper sulfate solution was added to each sample. Samples were mixed for one hour and prepared and analyzed according to EPA Methods for Chemical Analysis of Water and Wastes; EPA 600/4-79-020, Method 420.1, Phenolics, Total Recoverable, Spectrophotometric, Manual 4-AAP with Distillation.

B. GC/MS Volatile Organic Analyses and Screens

Volatile analysis of the samples was performed using methods based on EPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, July 1982; Method 8240, GC/MS Methods for Volatile Organics.

C. GC/MS Semi-Volatile Organic Analyses and Screens-Solids

Acid and base neutral extractables were prepared and analyzed using methods based on USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, July 1982, Method 8270, GC/MS Methods for Semi-Volatile Organics. Extractions were performed by either Method 3540, Soxhlet Extraction or Method 3550, Sonication Extraction.

PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICES

- D. Density - Densities of the samples were determined according to Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985; Method 213E, Specific Gravity.
- E. Percent Solids - Percent solids for the samples were determined according to Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985; Method 209F, Total, Fixed and Volatile Solids in Solid and Semi-solid Samples.
- F. Polychlorinated Biphenyls and Organochlorine Pesticides - Solid samples were analyzed and prepared according to USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, 1982; Method 3550, Sonication Extraction or Method 3540, Soxhlet Extraction and Method 8080, Organochlorine Pesticides and PCBs.
- G. Total Cyanide - The samples were prepared by accurately weighing an approximate 20 gm aliquot of each sample into 500 ml of Lab Grade I water. The samples were adjusted to pH 12 and stirred for one hour. The samples were then analyzed according to USEPA Test Methods for Evaluating Solid Wastes, SW-846, 2nd edition, July 1982 (Revised April 1984); Method 9010, Total and amenable Cyanide and by Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985; Method 412E Cyanide Selective Electrode Method.
- H. Priority Pollutant Metals - Samples were prepared and analyzed according to USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, July 1982. Samples were prepared by either Method 3010, 3030, 3050, or 1310 as appropriate for the following metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc. Sample analyses for these metals were performed according to method 6010, Inductively Coupled Plasma Method (SW-846 Proposed Sampling and Analytical Methodologies, 1984). Arsenic and selenium were analyzed by Method 7061 and Method 7741, respectively, Gaseous Hydride Methods. Mercury was prepared and analyzed by Method 7470 (liquids) or Method 7471 (solids), as appropriate, Manual Cold Vapor Techniques. Method 7470 was used when Method 1310 was used to prepare the samples.

PROJECT 4033

SUMMARY REPORT OF ANALYTICAL SERVICES

- I. Peroxides - All samples were tested for the presence of peroxides by using commercially available peroxide test strips.
- J. pH - All samples that were water soluble were tested with pH strips to determine if they were corrosive as per EPA-600/4-84-038 (May 1984); Characterization of Hazardous Waste Sites, Vol. III.
- K. Sulfides - Sulfide analyses were performed according to EPA 600/4-84-038, Characterization of Hazardous Waste Sites-A Methods Manual, May 1984; Section 17, G.1.2. Determination of Sulfide in Solid Phase Hazardous Waste Disposal Site Samples.
- L. Paint Filter Test - This test was performed on the samples in accordance with Method 9095, Paint Filter Liquids Test; USEPA SW-846, 2nd edition, July 1982, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods.
- M. Oxidizers - All water soluble or partially water soluble samples were tested for oxidizing strength by a spot test with potassium iodide and starch paper.
- N. Flammability - Flash points were performed at 60°C according to the procedure specified in USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 2nd edition, July 1982; Method 1020, Seta-flash Closed-cup Method.
- O. Density, Organic Liquids - Densities for organic liquids in accordance with ASTM D1298-80, Standard Test Method for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method; Section 5, Vol. 05.01 (1983).
- P. Total Solids, Liquids - Total solids for the liquid samples were determined by USEPA 600/4-79-020 (Revised March 1983); Method 160.3, Residue, Total (Gravimetric, Dried at 103-105°C).
- Q. BTU Content-Solids and Liquids - The BTU content of the samples was determined by either ASTM E711-81, Test Method for Gross Calorific Value of Refuse Derived Fuel (RDF-3) by Bomb Calorimeter, Section II, Vol. 11.04 or by ASTM D240-76, Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, Section 5, Vol. 05.01.

PROJECT 4033SUMMARY REPORT OF ANALYTICAL SERVICES

- R. Ash Content - The ash content of the samples was determined by either ASTM E830-81, Test Method for Ash in the Analysis Samples of Refuse-Derived Fuel (RDF-3), Section II, Vol. 11.04, or by ASTM D482-80 Test Method for Ash from Petroleum Products, Section 5, Vol. 05.01.
- S. Sulfur Content - The sulfur content of the samples was determined by either ASTM E775-81, Test Methods for Total Sulfur in the Analysis Sample of Refuse-Derived Fuel, Section II, Vol. 11.04, or by ASTM D129-64 (1978), Test Method for Sulfur in Petroleum Products (General Bomb Method), Section 5, Vol. 05.01.
- T. PCB Content - The PCB content of the samples was determined by USEPA 600/4-81-045, Sept. 1982, Test Method for the Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils.

III. ANALYTICAL RESULTS

Tables 1 through \_\_\_\_\_ details the results of the various analyses performed on composite samples #4033-1000, 4033-1002, 4033-1003, 4033-1004, and 4033-1005.

PROJECT 4033TABLE 1 - LANDFILL DISPOSAL ANALYSIS

SAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 4033-1000

Parameter	Result
Peroxides	Negative
Density	1.42 gm/cm <sup>3</sup>
Percent Solids	84.4% by weight
Flammability	> 60°C
Total Cyanide	< 1.0 mg/kg
Total Sulfide	< 4.0 mg/kg
Total Phenols	46.4 mg/kg
Oxidizer	Negative
pH Test	11.8 pH units
Paint Filter Test	Pass



PROJECT 4033TABLE 1 - LANDFILL DISPOSAL ANALYSIS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1002

Parameter	Result
Peroxides	Negative
Density	1.34gm/cm <sup>3</sup>
Percent Solids	60.2% by weight
Flammability	> 60°C
Total Cyanide	< 1.0 mg/kg
Total Sulfide	< 4.0 mg/kg
Total Phenols	0.42 mg/kg
Oxidizer	Negative
pH Test	5.7 pH units
Paint Filter Test	Pass

PROJECT 4033TABLE 1 - LANDFILL DISPOSAL ANALYSIS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1003

Parameter	Result
Peroxides	Negative
Density	1.23 gm/cm <sup>3</sup>
Percent Solids	32.1% by weight
Flammability	> 60°C
Total Cyanide	1,120 mg/kg
Total Sulfide	< 4.0 mg/kg
Total Phenols	4.11 mg/kg
Oxidizer	Negative
pH Test	5.8 pH units
Paint Filter Test	Pass

PROJECT 4033TABLE 1 - LANDFILL DISPOSAL ANALYSIS (CONTINUED)

SAMPLE IDENTIFIER: Soil  
OHM SAMPLE NUMBER: 4033-1005

Parameter	Result
Peroxides	Negative
Density	1.93 gm/cm <sup>3</sup>
Percent Solids	79.0% by weight
Flammability	> 60°C
Total Cyanide	< 1.0 mg/kg
Total Sulfide	< 4.0 mg/kg
Total Phenols	9.42 mg/kg
Oxidizer	Negative
pH Test	5.2 pH units
Paint Filter Test	Pass

PROJECT 4033TABLE 2 - INCINERATION DISPOSAL ANALYSIS

SAMPLE IDENTIFIER: Black Liquid  
OHM SAMPLE NUMBER: 4033-1004

Parameter	Result
Peroxides	Negative
Percent Solids	39.5% by weight
Density, Organic Liquids	0.926 gm/cm <sup>3</sup>
Flashpoint, PM, CC	< 26°C
Viscosity, Relative	Medium
BTU Content	12,500 BTU/LB
Ash Content	4.43% by weight
Chlorine Content	1.30% by weight
Sulfur Content	0.0579% by weight

PROJECT 4033TABLE 3 - EP TOX LEACHABLE METALS FOR LANDFILL DISPOSAL ANALYSIS

SAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 4033-1000

Compound Name	Concentration mg/L	Detection Limit mg/L
Antimony	BDL	.1
Arsenic	BDL	.1
Barium	0.512	.1
Beryllium	BDL	.1
Cadmium	BDL	.1
Chromium (Total)	BDL	.1
Copper	BDL	.1
Lead	BDL	.1
Mercury	BDL	.05
Nickel	0.124	.1
Selenium	BDL	.1
Silver	BDL	.1
Thallium	BDL	.1
Zinc	1.91	.1

mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 3 - EP TOX LEACHABLE METALS FOR LANDFILL DISPOSAL ANALYSIS  
(CONTINUED)SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1002

Compound Name	Concentration mg/L	Detection Limit mg/L
Antimony	BDL	.1
Arsenic	BDL	.1
Barium	0.199	.1
Beryllium	BDL	.1
Cadmium	BDL	.1
Chromium (Total)	BDL	.1
Copper	BDL	.1
Lead	BDL	.1
Mercury	BDL	.05
Nickel	BDL	.1
Selenium	BDL	.1
Silver	BDL	.1
Thallium	BDL	.1
Zinc	BDL	.1

mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 3 - EP TOX LEACHABLE METALS FOR LANDFILL DISPOSAL ANALYSIS  
(CONTINUED)SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1003

Compound Name	Concentration mg/L	Detection Limit mg/L
Antimony	BDL	.1
Arsenic	BDL	.1
Barium	0.162	.1
Beryllium	BDL	.1
Cadmium	BDL	.1
Chromium (Total)	BDL	.1
Copper	BDL	.1
Lead	BDL	.1
Mercury	BDL	.05
Nickel	BDL	.1
Selenium	BDL	.1
Silver	BDL	.1
Thallium	BDL	.1
Zinc	0.271	.1

mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 3 - EP TOX LEACHABLE METALS FOR LANDFILL DISPOSAL ANALYSIS  
(CONTINUED)SAMPLE IDENTIFIER: Soil  
OHM SAMPLE NUMBER: 4033-1005

Compound Name	Concentration mg/L	Detection Limit mg/L
Antimony	BDL	.1
Arsenic	BDL	.1
Barium	0.346	.1
Beryllium	BDL	.1
Cadmium	BDL	.1
Chromium (Total)	BDL	.1
Copper	BDL	.1
Lead	BDL	.1
Mercury	BDL	.05
Nickel	BDL	.1
Selenium	BDL	.1
Silver	BDL	.1
Thallium	BDL	.1
Zinc	0.164	.1

mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit



PROJECT 4033TABLE 4 - TOTAL METALS FOR INCINERATION DISPOSAL ANALYSIS

SAMPLE IDENTIFIER: Black Liquid  
OHM SAMPLE NUMBER: 4033-1004

Compound Name	Concentration mg/L	Detection Limit mg/L
Antimony	5.11	2.0
Arsenic	5.10	2.0
Barium	449	2.0
Beryllium	BDL	2.0
Cadmium	BDL	2.0
Chromium (Total)	144	2.0
Copper	39.8	2.0
Lead	743	2.0
Mercury	BDL	1.0
Nickel	BDL	2.0
Selenium	BDL	2.0
Silver	BDL	2.0
Thallium	BDL	2.0
Zinc	1,300	2.0

mg/L = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 5 - SEMI-VOLATILE-PCB BY GC ANALYSIS

SAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 4033-1000

Compound	Concentration (mg/kg)
Aroclor 1016	BDL
Aroclor 1221	BDL
Aroclor 1232	BDL
Aroclor 1242	BDL
Aroclor 1248	BDL
Aroclor 1254	BDL
Aroclor 1260	BDL
Aroclor 1262	BDL
Aroclor 1268	BDL

Limit of Detection = 0.50 mg/kg ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033

TABLE 5 - SEMI-VOLATILE-PCB BY GC ANALYSIS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1002

Compound	Concentration (mg/kg)
Aroclor 1016	BDL
Aroclor 1221	BDL
Aroclor 1232	BDL
Aroclor 1242	BDL
Aroclor 1248	BDL
Aroclor 1254	BDL
Aroclor 1260	BDL
Aroclor 1262	BDL
Aroclor 1268	BDL

Limit of Detection = 5.0 mg/kg ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 5 - SEMI-VOLATILE-PCB BY GC ANALYSIS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1003

Compound	Concentration (mg/kg)
Aroclor 1016	BDL
Aroclor 1221	BDL
Aroclor 1232	BDL
Aroclor 1242	BDL
Aroclor 1248	BDL
Aroclor 1254	BDL
Aroclor 1260	BDL
Aroclor 1262	BDL
Aroclor 1268	BDL

Limit of Detection = 5.0 mg/kg ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 5 - SEMI-VOLATILE-PCB BY GC ANALYSIS (CONTINUED)

SAMPLE IDENTIFIER: Black Liquid  
OHM SAMPLE NUMBER: 4033-1004

Compound	Concentration (mg/kg)
Aroclor 1016	BDL
Aroclor 1221	BDL
Aroclor 1232	BDL
Aroclor 1242	BDL
Aroclor 1248	BDL
Aroclor 1254	BDL
Aroclor 1260	BDL
Aroclor 1262	BDL
Aroclor 1268	BDL

Limit of Detection = 10.0 mg/kg ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033

TABLE 5 - SEMI-VOLATILE-PCB BY GC ANALYSIS (CONTINUED)

SAMPLE IDENTIFIER: Soil  
OHM SAMPLE NUMBER: 4033-1005

Compound	Concentration (mg/kg)
Aroclor 1016	BDL
Aroclor 1221	BDL
Aroclor 1232	BDL
Aroclor 1242	BDL
Aroclor 1248	BDL
Aroclor 1254	BDL
Aroclor 1260	5.96
Aroclor 1262	BDL
Aroclor 1268	BDL

Limit of Detection = 5.0 mg/kg ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033

TABLE 6 - VOLATILE SCREEN

SAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 3044-1000

Compound	Concentration (mg/kg)
----------	-----------------------

No compounds detected at 25% height of internal standard

PROJECT 4033

TABLE 6 - VOLATILE SCREEN (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 3044-1002

Compound	Concentration (mg/kg)
----------	-----------------------

No compounds detected at 25% height of internal standard



PROJECT 4033

TABLE 6 - VOLATILE SCREEN (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 3044-1003

Compound	Concentration (mg/kg)
----------	-----------------------

No compounds detected at 25% height of internal standard

PROJECT 4033

TABLE 6 - VOLATILE SCREEN (CONTINUED)

SAMPLE IDENTIFIER: Soil  
OHM SAMPLE NUMBER: 3044-1005

Compound	Concentration (mg/kg)
----------	-----------------------

No compounds detected at 25% height of internal standard

## PROJECT 4033

TABLE 7 - VOLATILE ORGANICS

SAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 3044-1000

Compound Name	Concentration mg/kg	Detection Limit mg/kg
Benzene	BDL	5.0
Bromomethane	BDL	5.0
Bromodichloromethane	BDL	5.0
Bromoform	BDL	5.0
Carbon Tetrachloride	BDL	5.0
Chlorobenzene	BDL	5.0
Chloroethane	BDL	5.0
2-Chloroethylvinyl ether	BDL	5.0
Chloroform	BDL	5.0
Chloromethane	BDL	5.0
Dibromochloromethane	BDL	5.0
1,3-Dichlorobenzene	BDL	5.0
1,2-Dichlorobenzene	BDL	5.0
1,4-Dichlorobenzene	BDL	5.0
1,1-Dichloroethane	BDL	5.0
1,2-Dichloroethane	BDL	5.0
1,1-Dichloroethene	BDL	5.0
Trans-1,2-Dichloroethene	73.2	5.0
1,2-Dichloropropane	BDL	5.0
Total Dichloropropenes	BDL	5.0
Ethylbenzene	6.96	5.0
Methylene Chloride	BDL	5.0
1,1,2,2-Tetrachloroethane	BDL	5.0
Tetrachloroethene	47.3	5.0
1,1,1-Trichloroethane	BDL	5.0
1,1,2-Trichloroethane	BDL	5.0
Trichloroethene	210	5.0
Trichlorofluoromethane	BDL	5.0
Toluene	14.5	5.0
Vinyl Chloride	BDL	5.0
Total Xylenes	34.3	5.0

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

## PROJECT 4033

TABLE 7 - VOLATILE ORGANICS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 3044-1002

=====		
Compound Name	Concentration mg/kg	Detection Limit mg/kg
=====		
Benzene	BDL	5.0
Bromomethane	BDL	5.0
Bromodichloromethane	BDL	5.0
Bromoform	BDL	5.0
Carbon Tetrachloride	BDL	5.0
Chlorobenzene	BDL	5.0
Chloroethane	BDL	5.0
2-Chloroethylvinyl ether	BDL	5.0
Chloroform	BDL	5.0
Chloromethane	BDL	5.0
Dibromochloromethane	BDL	5.0
1,3-Dichlorobenzene	BDL	5.0
1,2-Dichlorobenzene	BDL	5.0
1,4-Dichlorobenzene	BDL	5.0
1,1-Dichloroethane	BDL	5.0
1,2-Dichloroethane	BDL	5.0
1,1-Dichloroethene	BDL	5.0
Trans-1,2-Dichloroethene	BDL	5.0
1,2-Dichloropropane	BDL	5.0
Total Dichloropropenes	BDL	5.0
Ethylbenzene	BDL	5.0
Methylene Chloride	BDL	5.0
1,1,2,2-Tetrachloroethane	BDL	5.0
Tetrachloroethene	BDL	5.0
1,1,1-Trichloroethane	BDL	5.0
1,1,2-Trichloroethane	BDL	5.0
Trichloroethene	BDL	5.0
Trichlorofluoromethane	BDL	5.0
Toluene	BDL	5.0
Vinyl Chloride	BDL	5.0

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 7 - VOLATILE ORGANICS (CONTINUED)SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 3044-1003

Compound Name	Concentration	Detection
	mg/kg	Limit mg/kg
Benzene	BDL	5.0
Bromomethane	BDL	5.0
Bromodichloromethane	BDL	5.0
Bromoform	BDL	5.0
Carbon Tetrachloride	BDL	5.0
Chlorobenzene	BDL	5.0
Chloroethane	BDL	5.0
2-Chloroethylvinyl ether	BDL	5.0
Chloroform	BDL	5.0
Chloromethane	BDL	5.0
Dibromochloromethane	BDL	5.0
1,3-Dichlorobenzene	BDL	5.0
1,2-Dichlorobenzene	BDL	5.0
1,4-Dichlorobenzene	BDL	5.0
1,1-Dichloroethane	BDL	5.0
1,2-Dichloroethane	BDL	5.0
1,1-Dichloroethene	BDL	5.0
Trans-1,2-Dichloroethene	305	5.0
1,2-Dichloropropane	BDL	5.0
Total Dichloropropenes	BDL	5.0
Ethylbenzene	BDL	5.0
Methylene Chloride	BDL	5.0
1,1,2,2-Tetrachloroethane	BDL	5.0
Tetrachloroethene	BDL	5.0
1,1,1-Trichloroethane	BDL	5.0
1,1,2-Trichloroethane	BDL	5.0
Trichloroethene	765	5.0
Trichlorofluoromethane	BDL	5.0
Toluene	BDL	5.0
Vinyl Chloride	BDL	5.0

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 7 - VOLATILE ORGANICS (CONTINUED)

SAMPLE IDENTIFIER: Soil Composite Sample  
 OHM SAMPLE NUMBER: 3044-1005

Compound Name	Concentration mg/kg	Detection Limit mg/kg
Benzene	BDL	5.0
Bromomethane	BDL	5.0
Bromodichloromethane	BDL	5.0
Bromoform	BDL	5.0
Carbon Tetrachloride	BDL	5.0
Chlorobenzene	BDL	5.0
Chloroethane	BDL	5.0
2-Chloroethylvinyl ether	BDL	5.0
Chloroform	BDL	5.0
Chloromethane	BDL	5.0
Dibromochloromethane	BDL	5.0
1,3-Dichlorobenzene	BDL	5.0
1,2-Dichlorobenzene	BDL	5.0
1,4-Dichlorobenzene	BDL	5.0
1,1-Dichloroethane	BDL	5.0
1,2-Dichloroethane	BDL	5.0
1,1-Dichloroethene	BDL	5.0
Trans-1,2-Dichloroethene	BDL	5.0
1,2-Dichloropropane	BDL	5.0
Total Dichloropropenes	BDL	5.0
Ethylbenzene	BDL	5.0
Methylene Chloride	BDL	5.0
1,1,2,2-Tetrachloroethane	BDL	5.0
Tetrachloroethene	BDL	5.0
1,1,1-Trichloroethane	BDL	5.0
1,1,2-Trichloroethane	BDL	5.0
Trichloroethene	BDL	5.0
Trichlorofluoromethane	BDL	5.0
Toluene	144	5.0
Vinyl Chloride	BDL	5.0
Total Xylenes	60.8	5.0

mg/kg = ppm (parts-per-million)  
 BDL = Below Detection Limit

PROJECT 4033

TABLE 8 - SEMI-VOLATILE SCREEN RESULTS

SAMPLE IDENTIFIER: Solidified Oily Sludge

OHM SAMPLE NUMBER: 4033-1000

Compound	Concentration (mg/kg)
Aliphatic Hydrocarbons	4,690

Aliphatic Hydrocarbons

4,690

Limit of Detection = 100 mg/kg ppm (parts-per-million)

PROJECT 4033TABLE 8 - SEMI-VOLATILE SCREEN RESULTS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1002

Compound	Concentration (mg/kg)
Aliphatic Hydrocarbons	27,600
Alkyl Substituted Cyclohexanes	987
Hexacosanol	447

Limit of Detection = 100 mg/kg ppm (parts-per-million)



PROJECT 4033TABLE 8 - SEMI-VOLATILE SCREEN RESULTS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1003

Compound	Concentration (mg/kg)
Aliphatic Hydrocarbons	2,640
Ethyl Decanol	37.0
Alkyl Cyclohexane	46.2

Limit of Detection = 20.0 mg/kg ppm (parts-per-million)

PROJECT 4033TABLE 8 - SEMI-VOLATILE SCREEN RESULTS (CONTINUED)

SAMPLE IDENTIFIER: Soil  
OHM SAMPLE NUMBER: 4033-1005

Compound	Concentration (mg/kg)
Aliphatic Hydrocarbons	543
Alkyl Substituted benzenes	140
Dihydrotrimethyl phenyl-1-H-indene	67.8
Unidentified compounds	279
1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9, 10,10a-o ctahydro-1,4a-dimethyl-7-(1-methyl- ethyl)-, [1R-(1.al pha.,4a.beta.,10a.alpha)]- (9CI)	83.3

Limit of Detection = 10.0 mg/kg ppm (parts-per-million)

PROJECT 4033  
TABLE 9 - BASE/NEUTRAL COMPOUNDSSAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 4033-1000

Compound	Concentration (mg/kg)
Acenaphthene	BDL
Acenaphthylene	BDL
Anthracene	BDL
Benzo(a)anthracene	BDL
Benzo(b)fluoranthene	BDL
Benzo(k)fluoranthene	BDL
Benzo(a)pyrene	BDL
Benzo(g,h,i)perylene	BDL
Bis(2-chloroethyl)ether	BDL
Bis(2-chloroethoxy)methane	BDL
Bis(2-ethylhexyl)phthalate	BDL
Bis(2-chloroisopropyl)ether	BDL
4-Bromophenyl phenyl ether	BDL
Butyl benzyl phthalate	BDL
2-Chloronaphthalene	BDL
4-Chlorophenyl phenyl ether	BDL
Chrysene	BDL
Dibenzo(a,h)anthracene	BDL
Di-n-butylphthalate	BDL
1,3-Dichlorobenzene	BDL
1,4-Dichlorobenzene	BDL
1,2-Dichlorobenzene	BDL
Diethylphthalate	BDL
Dimethylphthalate	BDL
2,4-Dinitrotoluene	BDL
2,6-Dinitrotoluene	BDL
Dioctylphthalate	BDL
1,2-Diphenyl hydrazine	BDL
Fluoranthene	BDL
Fluorene	BDL
Hexachlorobenzene	BDL
Hexachlorobutadiene	BDL
Hexachloroethane	BDL
Hexachlorocyclopentadiene	BDL
Indeno-(1,2,3-cd)pyrene	BDL
Isophorone	BDL
Naphthalene	BDL
Nitrobenzene	BDL
N-Nitrosodi-n-propylamine	BDL
N-Nitrosodiphenylamine	BDL
Phenanthrene	BDL
Pyrene	BDL
1,2,4-Trichlorobenzene	BDL

Limit of Detection = 100 mg/kg ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033  
TABLE 9 - BASE/NEUTRAL COMPOUNDS (CONTINUED)SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1002

Compound	Concentration (mg/kg)
Acenaphthene	BDL
Acenaphthylene	BDL
Anthracene	BDL
Benzo(a)anthracene	BDL
Benzo(b)fluoranthene	BDL
Benzo(k)fluoranthene	BDL
Benzo(a)pyrene	BDL
Benzo(g,h,i)perylene	BDL
Bis(2-chloroethyl)ether	BDL
Bis(2-chloroethoxy)methane	BDL
Bis(2-ethylhexyl)phthalate	BDL
Bis(2-chloroisopropyl)ether	BDL
4-Bromophenyl phenyl ether	BDL
Butyl benzyl phthalate	BDL
2-Chloronaphthalene	BDL
4-Chlorophenyl phenyl ether	BDL
Chrysene	BDL
Dibenzo(a,h)anthracene	BDL
Di-n-butylphthalate	BDL
1,3-Dichlorobenzene	BDL
1,4-Dichlorobenzene	BDL
1,2-Dichlorobenzene	BDL
Diethylphthalate	BDL
Dimethylphthalate	BDL
2,4-Dinitrotoluene	BDL
2,6-Dinitrotoluene	BDL
Dioctylphthalate	BDL
1,2-Diphenyl hydrazine	BDL
Fluoranthene	BDL
Fluorene	BDL
Hexachlorobenzene	BDL
Hexachlorobutadiene	BDL
Hexachloroethane	BDL
Hexachlorocyclopentadiene	BDL
Indeno-(1,2,3-cd)pyrene	BDL
Isophorone	BDL
Naphthalene	BDL
Nitrobenzene	BDL
N-Nitrosodi-n-propylamine	BDL
N-Nitrosodiphenylamine	BDL
Phenanthrene	BDL
Pyrene	BDL
1,2,4-Trichlorobenzene	BDL

Limit of Detection = 100 mg/kg ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033  
TABLE 9 - BASE/NEUTRAL COMPOUNDS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
 OHM SAMPLE NUMBER: 4033-1003

Compound	Concentration (mg/kg)
Acenaphthene	BDL
Acenaphthylene	BDL
Anthracene	BDL
Benzo(a)anthracene	BDL
Benzo(b)fluoranthene	BDL
Benzo(k)fluoranthene	BDL
Benzo(a)pyrene	BDL
Benzo(g,h,i)perylene	BDL
Bis(2-chloroethyl)ether	BDL
Bis(2-chloroethoxy)methane	BDL
Bis(2-ethylhexyl)phthalate	BDL
Bis(2-chloroisopropyl)ether	BDL
4-Bromophenyl phenyl ether	BDL
Butyl benzyl phthalate	BDL
2-Chloronaphthalene	BDL
4-Chlorophenyl phenyl ether	BDL
Chrysene	BDL
Dibenzo(a,h)anthracene	BDL
Di-n-butylphthalate	BDL
1,3-Dichlorobenzene	BDL
1,4-Dichlorobenzene	BDL
1,2-Dichlorobenzene	BDL
Diethylphthalate	BDL
Dimethylphthalate	BDL
2,4-Dinitrotoluene	BDL
2,6-Dinitrotoluene	BDL
Dioctylphthalate	BDL
1,2-Diphenyl hydrazine	BDL
Fluoranthene	BDL
Fluorene	BDL
Hexachlorobenzene	BDL
Hexachlorobutadiene	BDL
Hexachloroethane	BDL
Hexachlorocyclopentadiene	BDL
Indeno-(1,2,3-cd)pyrene	BDL
Isophorone	BDL
Naphthalene	BDL
Nitrobenzene	BDL
N-Nitrosodi-n-propylamine	BDL
N-Nitrosodiphenylamine	BDL
Phenanthrene	BDL
Pyrene	BDL
1,2,4-Trichlorobenzene	BDL

Limit of Detection = 20 mg/kg ppm (parts-per-million)

BDL = Below Detection Limit

PROJECT 4033  
TABLE 9 - BASE/NEUTRAL COMPOUNDS (CONTINUED)

SAMPLE IDENTIFIER: Soil  
 OHM SAMPLE NUMBER: 4033-1005

Compound	Concentration (mg/kg)
Acenaphthene	BDL
Acenaphthylene	BDL
Anthracene	BDL
Benzo(a)anthracene	BDL
Benzo(b)fluoranthene	BDL
Benzo(k)fluoranthene	BDL
Benzo(a)pyrene	BDL
Benzo(g,h,i)perylene	BDL
Bis(2-chloroethyl)ether	BDL
Bis(2-chloroethoxy)methane	BDL
Bis(2-ethylhexyl)phthalate	BDL
Bis(2-chloroisopropyl)ether	BDL
4-Bromophenyl phenyl ether	BDL
Butyl benzyl phthalate	BDL
2-Chloronaphthalene	BDL
4-Chlorophenyl phenyl ether	BDL
Chrysene	BDL
Dibenzo(a,h)anthracene	BDL
Di-n-butylphthalate	BDL
1,3-Dichlorobenzene	BDL
1,4-Dichlorobenzene	BDL
1,2-Dichlorobenzene	BDL
Diethylphthalate	BDL
Dimethylphthalate	BDL
2,4-Dinitrotoluene	BDL
2,6-Dinitrotoluene	BDL
Dioctylphthalate	BDL
1,2-Diphenyl hydrazine	BDL
Fluoranthene	BDL
Fluorene	BDL
Hexachlorobenzene	BDL
Hexachlorobutadiene	BDL
Hexachloroethane	BDL
Hexachlorocyclopentadiene	BDL
Indeno-(1,2,3-cd)pyrene	BDL
Isophorone	BDL
Naphthalene	BDL
Nitrobenzene	BDL
N-Nitrosodi-n-propylamine	BDL
N-Nitrosodiphenylamine	BDL
Phenanthrene	BDL
Pyrene	BDL
1,2,4-Trichlorobenzene	BDL

Limit of Detection = 10 mg/kg ppm (parts-per-million)

BDL = Below Detection Limit

PROJECT 4033TABLE 11 - ACID EXTRACTABLE

SAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 4033-1000

=====		
Compound Name	Concentration mg/kg	Detection Limit mg/kg
=====		
4-Chloro-3-Methylphenol	BDL	100
2-Chlorophenol	BDL	100
2,4-Dichlorophenol	BDL	100
2,4-Dimethylphenol	BDL	100
2,4-Dinitrophenol	BDL	100
2-Methyl-4,6-Dinitrophenol	BDL	100
2-Nitrophenol	BDL	100
4-Nitrophenol	BDL	100
Pentachlorophenol	BDL	100
Phenol	BDL	100
2,4,6-Trichlorophenol	BDL	100

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 11 - ACID EXTRACTABLE (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1002

Compound Name	Concentration mg/kg	Detection Limit mg/kg
4-Chloro-3-Methylphenol	BDL	100
2-Chlorophenol	BDL	100
2,4-Dichlorophenol	BDL	100
2,4-Dimethylphenol	BDL	100
2,4-Dinitrophenol	BDL	100
2-Methyl-4,6-Dinitrophenol	BDL	100
2-Nitrophenol	BDL	100
4-Nitrophenol	BDL	100
Pentachlorophenol	BDL	100
Phenol	BDL	100
2,4,6-Trichlorophenol	BDL	100

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit



PROJECT 4033TABLE 11 - ACID EXTRACTABLE (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1003

=====		
Compound Name	Concentration mg/kg	Detection Limit mg/kg
=====		
4-Chloro-3-Methylphenol	BDL	20.0
2-Chlorophenol	BDL	20.0
2,4-Dichlorophenol	BDL	20.0
2,4-Dimethylphenol	BDL	20.0
2,4-Dinitrophenol	BDL	20.0
2-Methyl-4,6-Dinitrophenol	BDL	20.0
2-Nitrophenol	BDL	20.0
4-Nitrophenol	BDL	20.0
Pentachlorophenol	BDL	20.0
Phenol	BDL	20.0
2,4,6-Trichlorophenol	BDL	20.0

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 11 - ACID EXTRACTABLE (CONTINUED)

SAMPLE IDENTIFIER: Soil  
OHM SAMPLE NUMBER: 4033-1005

Compound Name	Concentration mg/kg	Detection Limit mg/kg
4-Chloro-3-Methylphenol	BDL	10.0
2-Chlorophenol	BDL	10.0
2,4-Dichlorophenol	BDL	10.0
2,4-Dimethylphenol	BDL	10.0
2,4-Dinitrophenol	BDL	10.0
2-Methyl-4,6-Dinitrophenol	BDL	10.0
2-Nitrophenol	BDL	10.0
4-Nitrophenol	BDL	10.0
Pentachlorophenol	BDL	10.0
Phenol	BDL	10.0
2,4,6-Trichlorophenol	BDL	10.0

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 12 - PESTICIDES AND PCBS

SAMPLE IDENTIFIER: Solidified Oily Sludge  
OHM SAMPLE NUMBER: 4033-1000

=====		
Compound Name	Concentration mg/kg	Detection Limit mg/kg
=====		
Aldrin	BDL	100
BHC-alpha	BDL	100
BHC-beta	BDL	100
BHC-gamma	BDL	100
BHC-delta	BDL	100
Chlordane	BDL	1,000
4,4'-DDD	BDL	100
4,4'-DDE	BDL	100
4,4'-DDT	BDL	100
Dieldrin	BDL	100
Endosulfan-alpha	BDL	100
Endosulfan-beta	BDL	100
Endosulfan Sulfate	BDL	100
Endrin	BDL	100
Endrin Aldehyde	BDL	100
Heptachlor	BDL	100
Heptachlor Epoxide	BDL	100
Toxaphene	BDL	1,000

POLYCHLORINATED BIPHENYLS

Aroclor 1016	BDL	1,000
Aroclor 1221	BDL	1,000
Aroclor 1232	BDL	1,000
Aroclor 1242	BDL	1,000
Aroclor 1248	BDL	1,000
Aroclor 1254	BDL	1,000
Aroclor 1260	BDL	1,000

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 12 - PESTICIDES AND PCBS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1002

Compound Name	Concentration	
	mg/kg	Detection Limit mg/kg
Aldrin	BDL	100
BHC-alpha	BDL	100
BHC-beta	BDL	100
BHC-gamma	BDL	100
BHC-delta	BDL	100
Chlordane	BDL	1,000
4,4'-DDD	BDL	100
4,4'-DDE	BDL	100
4,4'-DDT	BDL	100
Dieldrin	BDL	100
Endosulfan-alpha	BDL	100
Endosulfan-beta	BDL	100
Endosulfan Sulfate	BDL	100
Endrin	BDL	100
Endrin Aldehyde	BDL	100
Heptachlor	BDL	100
Heptachlor Epoxide	BDL	100
Toxaphene	BDL	1,000

POLYCHLORINATED BIPHENYLS

Aroclor 1016	BDL	1,000
Aroclor 1221	BDL	1,000
Aroclor 1232	BDL	1,000
Aroclor 1242	BDL	1,000
Aroclor 1248	BDL	1,000
Aroclor 1254	BDL	1,000
Aroclor 1260	BDL	1,000

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 12 - PESTICIDES AND PCBS (CONTINUED)

SAMPLE IDENTIFIER: Sludge  
OHM SAMPLE NUMBER: 4033-1003

=====		
Compound Name	Concentration mg/kg	Detection Limit mg/kg
=====		
Aldrin	BDL	20.0
BHC-alpha	BDL	20.0
BHC-beta	BDL	20.0
BHC-gamma	BDL	20.0
BHC-delta	BDL	20.0
Chlordane	BDL	200
4,4'-DDD	BDL	20.0
4,4'-DDE	BDL	20.0
4,4'-DDT	BDL	20.0
Dieldrin	BDL	20.0
Endosulfan-alpha	BDL	20.0
Endosulfan-beta	BDL	20.0
Endosulfan Sulfate	BDL	20.0
Endrin	BDL	20.0
Endrin Aldehyde	BDL	20.0
Heptachlor	BDL	20.0
Heptachlor Epoxide	BDL	20.0
Toxaphene	BDL	200

POLYCHLORINATED BIPHENYLS

Aroclor 1016	BDL	200
Aroclor 1221	BDL	200
Aroclor 1232	BDL	200
Aroclor 1242	BDL	200
Aroclor 1248	BDL	200
Aroclor 1254	BDL	200
Aroclor 1260	BDL	200

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit

PROJECT 4033TABLE 12 - PESTICIDES AND PCBS (CONTINUED)

SAMPLE IDENTIFIER: Soil  
OHM SAMPLE NUMBER: 4033-1005

Compound Name	Concentration	Detection
	mg/kg	Limit mg/kg
Aldrin	BDL	10.0
BHC-alpha	BDL	10.0
BHC-beta	BDL	10.0
BHC-gamma	BDL	10.0
BHC-delta	BDL	10.0
Chlordane	BDL	100
4,4'-DDD	BDL	10.0
4,4'-DDE	BDL	10.0
4,4'-DDT	BDL	10.0
Dieldrin	BDL	10.0
Endosulfan-alpha	BDL	10.0
Endosulfan-beta	BDL	10.0
Endosulfan Sulfate	BDL	10.0
Endrin	BDL	10.0
Endrin Aldehyde	BDL	10.0
Heptachlor	BDL	10.0
Heptachlor Epoxide	BDL	10.0
Toxaphene	BDL	100

POLYCHLORINATED BIPHENYLS

Aroclor 1016	BDL	100
Aroclor 1221	BDL	100
Aroclor 1232	BDL	100
Aroclor 1242	BDL	100
Aroclor 1248	BDL	100
Aroclor 1254	BDL	100
Aroclor 1260	BDL	100

mg/kg = ppm (parts-per-million)  
BDL = Below Detection Limit



The Environmental Services Company

O.H. Materials Co.  
P.O. Box 551  
Findlay, Ohio 45839-0551  
Phone (419) 423-3526

# CHAIN-OF-CUSTODY RECORD

Cx✓

No 13360

PROJECT LOCATION			NAME OF CLIENT		PROJECT TELEPHONE NO		PROJECT NUMBER				
Columbia City, IN.			WRR		219-248-2498		4033				
ITEM NUMBER	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINERS	DESCRIPTION			TRANSFER NUMBER & CHECK					
						1	2	3	4	5	6
1	4033-1000	2-QT JARS	1030 R/DN dup Samples From OA-1 Solidified oily Sludge			✓	✓				
2	4033-1001	2-QT JARS	1000 R/DN Semi-clear L.P. w/ TAP MATERIAL dup Samples From TAC Pit (LIQUID)			✓	✓				
3	4033-1002	2 QTS JARS	1100 R/DN TOP LAYER 05 SLUDGE RAINING ORANGE/GRAY MATERIAL			✓	✓				
4	4033-1003	2 QT JARS	1100 R/DN BOTTOM LAYER 05 SLUDGE RAINING ORANGE/BLACK			✓	✓				
5	4033-1004	2 QT JARS	0-DCM								
6											
7											
8											

9 Notes: dup Samples 1 is for disposal ANALYSIS other is to be sent to disposal

Person Responsible for sample	Affiliation	Date	Time	TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
DAVID MEERKE	O.H.M.	8/4	1130	1	1-4	Meerke	Robert L. Taylor	8/4/76	1530
Purpose of analysis (use back of front sheet if necessary) SAMPLE 1000 TO BE RUN FOR Priority Pollutants ONLY 4 TO 10 DAYS Turnaround SAMPLES 1001 TO BE RUN FOR disposal 1002 ANALYSIS 1003 ANALYSIS				2	1-4	Robert L. Taylor	Wynne L. Word	8/4/76	2000
				3					
				4					
				5					
				6					



O.H. Materials Co.  
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Findlay, Ohio 45839-0551  
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# CHAIN-OF-CUSTODY RECORD

Nº 20616

PROJECT LOCATION		NAME OF CLIENT		PROJECT TELEPHONE NO	PROJECT NUMBER				
Columbia City, IN.		WRR		219-248-2498	4033				
ITEM NUMBER	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINERS	DESCRIPTION	TRANSFER NUMBER & CHECK					
				1	2	3	4	5	6
1	4033-1004	2 QTS dup	BLK Lip Composite of Soil from Bulk King dup 8/6 1100						
2	4033-1005	2 QTS dup	Composite of Soils AT AREA "A" Silver Gray 8/6 1130						
3	4033-1001	2-QTS dup.	Semi-Clear Lip with Tar Needed More Sample 8/3 0900						

Person Responsible for sample	Affiliation	Date	Time	TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
Smear	OHM	8/13	0930	1	1-3	Smear	[Signature]	8/13/80	1000
Purpose of analysis (use back of front sheet if necessary) 1004 & 1005 disposal ANALYSIS 1001 Priority Pollutants Findlay Requested additional sample				2	1-3	T. Edinger	[Signature]	8/13/80	1100
				3					
				4					
				5					
				6					